

IN THE SPECIFICATION:

Page 1, line 6, insert the following new section:

CROSS-REFERENCE TO RELATED APPLICATION

This is a divisional of US Application No. 09/811,606 filed 20 March 2001,
pending.

Page 14, lines 8-20, insert the following replacement paragraph:

A lift-off pattern is formed in a region on the previous electrode layer consisting of a magnetoresistive sensor layer, so as to form thereon a layer having a thickness of 150 nm made of a mixture of Al₂O₃ and SiO₂. This may be a single phase layer made of Al₂O₃ or SiO₂. After lifting this off, a magnetoresistive sensor layer 105 is formed, and a layer 108 (e.g., FIG. 2) is formed on top of electrode layer 111. In the magnetoresistive sensor layer, there are studied as the examples two types of using GMR and of using TMR. An electric current for sensing a signal (sensing current) is flowed perpendicular to the plane of these magnetoresistive sensor layers (Current Perpendicular to the Plane: CPP).

Page 29, line 19 through page 31, line 3, insert the following replacement paragraph:

FIG. 20 shows a representative structure of an already known MRAM as one example of the magnetic recording sensor. The magnetic recording sensor has a structure comprising a plurality of cells in parallel including a magnetoresistive sensor layer 2002 for recording information, a bit line 2001 connected to the magnetoresistive sensor layer for flowing an electric current 2003 to the sensor, a

word line 2005 (with current 2006) in the position opposite the bit line 2001 by interposing therebetween the magnetoresistive sensor layer 2002 and in the position away from the magnetoresistive sensor layer 2002 for performing recording operation onto the magnetoresistive sensor layer orthogonally to the bit line, an amplifying system for amplifying a read signal, and a read conductive line 2007 (supported by structures 2004, 2009) for switching between read and write, wherein the magnetoresistive sensor layer 2002 comprises the magnetoresistive sensor layer as shown in Example 1. Since an electric current flows perpendicular to the plane, the use of the magnetoresistive sensor layer is similar to that of Example 1. The magnetoresistive sensor layer has the size consisting of one side of 0.2 to 0.25 μm . The magnetization of the free layer of the magnetoresistive sensor layer is rotated in the direction of an electric current flowing through the word line and the bit line, by varying the direction of the synthetic magnetic field caused in the magnetoresistive sensor layer portion. When the magnetization direction of the free layer of the magnetoresistive sensor layer is rotated and the magnetic domain is caused in the free layer, the resistance value to the magnetic field is varied to lower the S/N ratio, so that memory cannot be read. In order to controllably perform this, the magnetic domain control layer is required. Magnetic domain control layers having high electric resistivity 2008 devised in the present invention are positioned on opposite ends of the magnetoresistive element layer 2002. Thus, magnetic domain control is possible without loss of shunting to the magnetic domain control layer, so as to improve the recording density of the magnetic recording sensor.